

03050202-060

(*Atlantic Intracoastal Waterway*)

General Description

Watershed 03050202-060 is located in Charleston County and consists primarily of the *Atlantic Intracoastal Waterway* and its tributaries from the Ben Sawyer Bridge to the South Santee River. The watershed occupies 118,510 acres of the Coastal Zone region of South Carolina. The predominant soil types consist of an association of the Bohicket-Capers-Chipley series. The erodibility of the soil (K) averages 0.20 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 41.5% nonforested wetland, 35.4% forested land, 16.1% water, 3.0% urban land, 2.2% scrub/shrub land, 0.8% forested wetland, 0.5% agricultural land, and 0.5% barren land.

This watershed contains a portion of the Atlantic Intracoastal Waterway (AIWW), which flows past numerous sea islands and the tidally influenced creeks that separate them. This reach of the AIWW is classified SFH. Inlet Creek, Swinton Creek, and Conch Creek located near Sullivans Island, drain to the Atlantic Ocean via Breach Inlet. Morgan Creek, Seven Reaches, and Cedar Creek flow into Meeting Reach (AIWW). Seven Reaches also drains into Gray Sound (SFH) as does Hamlin Creek and Long Creek. Hamlin and Long Creeks also flow into Hamlin Sound (SFH), which in turn drains into Copahee Sound (ORW) and Bullyard Sound (ORW). Dewees Creek collects drainage from Bullyard Sound and Hamlin Sound, together with Old House Creek and Horsebend Creek, and flows through Dewees Inlet (SFH) to the Atlantic Ocean.

Capers Creek, Watermelon Creek, Toomer Creek, and Whiteside Creek drain to the ocean through Capers Inlet (ORW). The Santee Pass connects Capers Creek to Mark Bay (ORW) and drains to the ocean via Price Inlet (ORW). Other streams draining into Price Inlet include Price Creek, Clauson Creek, and Bull Narrows. Bull Narrows also flows into Sewee Bay (SFH) and Hickory Bay. Back Creek connects Sewee Bay to Bull Creek (Summerhouse Creek, Jack Creek), which flows into Bull Harbor and Bulls Bay (ORW). Other streams draining into Bull Harbor and Bulls Bay include Anderson Creek, Blind Creek, Venning Creek, Belvedere Creek, Vanderhorst Creek, Saltpond Creek, and Graham Creek.

Bell Creek (Cooter Creek, Withey Wood Canal) and Steed Creek join to form Awendaw Creek and Lake Awendaw (125 acres), which flows into the Harbor River (AIWW) and into Bulls Bay. Other streams draining into the Harbor River from the mainland, near the Town of McClellanville, include Sandy Point Creek, Doe Hall Creek, Tibwin Creek, and Long Creek. Bull River (Sett Creek, Little Sett Creek) and Five Fathom Creek (Clark Creek, Key Creek, Key Bay, Santee Path Creek, Papas Creek, Little Papas Creek, Matthews Creek, Town Creek, Clubhouse Creek) drain directly into Bulls Bay. Five Fathom Creek is classified SFH. Jeremy Creek flows into the AIWW across the waterway from Five Fathom Creek. Clubhouse Creek connects Five Fathom Creek to Oyster Bay and Muddy Bay (Nellie Creek, Joe and Ben Creek, Shrine Creek, Horsehead Creek).

The Romain River is formed at the confluence of Santee Path Creek and Nellie Creek, and accepts drainage from Key Creek (Bay Creek), Muddy Bay, and Slack Reach (Devils Den Creek, Horsehead Creek, Mill Den Creek) before flowing into Cape Romain Harbor (ORW). Key Creek also drains into the ocean via Raccoon Creek and Key Inlet. Other streams draining in Cape Romain Harbor include Congaree Boat Creek (Joe and Ben Creek), Casino Creek (Mill Creek, Needles Eye Creek), Deepwater Creek, and Alligator Creek (Ramhorn Creek). There are 2,720.3 acres of lake waters and 13,296.5 acres of estuarine areas in this watershed. Additional natural resources in the watershed include the Cape Romain National Wildlife Refuge (55,000 acres) and portions of the Frances Marion National Forest.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
MD-265	INT	SFH/ORW	ALLIGATOR CREEK AT STATE SHELLFISH GROUND
MD-266	INT	SFH/ORW	CASINO CREEK AT CLOSURE LINE
RT-02016	RT02	ORW	EAST FORK OF DEVILS DEN CREEK HEADWATERS
MD-203	P/W	SFH	JEREMY CREEK NEAR BOAT LANDING AT MCCLELLANVILLE TOWN HALL
RT-01623	RT01	SFH	MATTHEWS CREEK TRIBUTARY, 1 MI S OF MCCLELLANVILLE
MD-267	INT	SFH	FIVE FATHOM CREEK AT BULL RIVER
RO-02008	RO02	SFH	FIVE FATHOM CREEK NEAR MOUTH OF SANTEE PATH CREEK
MD-250	W	SFH	AWENDAW CREEK AT US 17
MD-268	W/INT	SFH	AWENDAW CREEK AT MARKER #57
RT-01668	RT01	SFH	VANDERHORST CREEK, 11.75 MI SW OF MCCLELLANVILLE
MD-269	INT	SFH	SEWEE BAY AT MOORES LANDING
RT-02004	RT02	ORW	BACK CREEK TRIBUTARY ON BULL ISLAND
MD-270	INT	ORW	BULLYARD SOUND AT MARKER #104
MD-271	INT	SFH	HAMLIN SOUND
MD-272	INT	SFH	LOWER HAMLIN CREEK AT SITE OF NEW BRIDGE
RT-02006	RT02	SFH	CONCH CREEK, 1 MI FROM SAWYER BRIDGE
MD-069	INT	SB/SFH	AIWW AT SC 703, E OF MT. PLEASANT

Alligator Creek (MD-265) - Aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low dissolved oxygen concentration conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

Casino Creek (MD-266) - Aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low dissolved oxygen concentration conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

Devils Den Creek (RT-02016) - Aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life acute criterion. This is a blackwater system, characterized by naturally low dissolved oxygen concentration conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are fully supported.

Jeremy Creek (MD-203) – Aquatic life uses are not supported due to dissolved oxygen and turbidity excursions, compounded by a significant increasing trend in turbidity. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Matthew Creek Tributary (RT-01623) - Aquatic life uses are not supported due to turbidity excursions. This is a blackwater system, characterized by naturally low dissolved oxygen concentration conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are fully supported.

Five Fathom Creek - There are two SCDHEC monitoring sites along Five Fathom Creek, and aquatic life and recreational uses are fully supported at both sites (***MD-267, RO-02008***). This is a blackwater system, characterized by naturally low dissolved oxygen concentration conditions. Although dissolved oxygen excursions occurred at the upstream site, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

Awendaw Creek - There are two SCDHEC monitoring sites along Awendaw Creek, and aquatic life uses are fully supported at both sites (***MD-250, MD-268***). This is a blackwater system, characterized by naturally low pH and dissolved oxygen concentration conditions. Although pH excursions occurred at the upstream site and dissolved oxygen excursions occurred at both sites, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are not supported at the upstream site (***MD-250***) due to fecal coliform bacteria excursions and fully supported at the downstream site (***MD-268***).

Vanderhorst Creek (RT-01668) - Aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low dissolved oxygen concentration conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

Sewee Bay (MD-269) - Aquatic life and recreational uses are fully supported.

Back Creek Tributary (RT-02004) - Aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low dissolved oxygen concentration conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

Bullyard Sound (MD-270) - Aquatic life and recreational uses are fully supported.

Hamlin Sound (MD-271) - Aquatic life and recreational uses are fully supported.

Hamlin Creek (MD-272) - Aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low dissolved oxygen concentration conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

Conch Creek (RT-02006) - Aquatic life and recreational uses are fully supported.

Atlantic Intracoastal Waterway (MD-069) – The water quality analysis is identical for both SFH and SB classifications. Aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life acute criterion. Significant decreasing trends in five-day biochemical oxygen demand, total phosphorus concentration, and total nitrogen concentration suggest improving conditions for these parameters. There is a significant decreasing trend in pH. Recreational uses are fully supported and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Santee Coastal Reserve Pond - The pond was treated in 1994, 1995, 1997-1999, and 2002-2005 with aquatic herbicides to control aquatic plant growth and reclaim recreational areas for waterfowl management and public access and use.

Santee Delta Plantation Wildlife Management Area – The management area was treated in 2004 and 2005 with aquatic herbicides to control aquatic plant growth and allow public access and use.

A fish consumption advisory has been issued by the Department for mercury and includes the Atlantic Ocean edging this watershed (see advisory p.69). Fish tissue samples from Muddy Bay and Cape Romain indicate no advisories are needed at this time.

Groundwater Quality

<u>Well #</u>	<u>Class</u>	<u>Aquifer</u>	<u>Location</u>
AMB-084	GB	SURFICIAL SANDS	MCCLELLANVILLE

Shellfish Monitoring Stations

<u>Station #</u>	<u>Description</u>
06B-07	ALLIGATOR CREEK AT MARKER 26
06B-08	CASINO CREEK AT MARKER 26
06B-09	DUPREE CREEK – 500 FT N OF NEW DOCK
06B-10	AIWW AT MARKER 32
06B-12	ALLIGATOR CREEK STATE SHELLFISH GROUND
06B-15	CASINO CREEK AT CAPE ROMAIN HARBOR
06B-16	CASINO CREEK MIDWAY BETWEEN STATION 19&24 (AT SMALL S.BOUND UNNAMED CREEK ON RIGHT)
06B-17	CONGAREE BOAT CREEK AT TOWER CREEK
06B-18	CONFLUENCE OF DUPREE CREEK AND CLUBHOUSE CREEK
06B-19	CONFLUENCE OF CASINO CREEK AND SHRINE CREEK
06B-20	1,000 YDS UPSTREAM DUPREE CREEK FROM CLUBHOUSE CREEK
06B-21	CONFLUENCE OF ALLIGATOR CREEK AND RAMHORN CREEK

06B-22	CONFLUENCE OF RAMHORN CREEK AND MILL CREEK
06B-23	CONFLUENCE OF SHRINE CREEK AND CONGAREE BOAT CREEK
06B-24	CONFLUENCE OF CASINO CREEK AND CONGAREE BOAT CREEK
06B-25	CONFLUENCE OF HORSEHEAD CREEK AND UNNAMED CREEK AT LOWER END OF HORSEHEAD ISLAND
06B-26	CONFLUENCE OF SHRINE CREEK AND UNNAMED CREEK N. OF MUDDY BAY
06B-27	CONFL. OF FIRST LARGE CREEK ON THE LEFT, WITH CONGAREE BOAT CREEK, TRAVELING SE OF STA.23
07-01	VENNING CREEK ADJACENT TO MARKER 67
07-02	GRAHAM CREEK AT MARKER 64
07-03	AWENDAW CREEK AT MARKER 57
07-04	HARBOR RIVER AT MARKER 48
07-04A	HARBOR RIVER AT BULLS BAY
07-05	TIBWIN CREEK AT MARKER 42
07-06	FIVE FATHOM CREEK AT MARKER 20
07-06A	FIVE FATHOM CREEK AT BULL RIVER
07-07	JEREMY CREEK OPPOSITE FIRE TOWER
07-08	CLUBHOUSE CREEK – ¼ MI N. OF FIVE FATHOM CREEK
07-08A	OYSTER BAY AT MUDDY BAY
07-09	CONFLUENCE OF DOEHALL CREEK WITH AIWW – N. OF MARKER 46
07-11	FIVE FATHOM CREEK AT MARKER 11
07-12	CONFLUENCE OF RACCOON CREEK AND ROMAIN RIVER
07-13	ROMAIN RIVER AT CONFLUENCE OF “S” CREEK
07-14	DOEHALL CREEK – THRID BEND
07-15	SANDY POINT CREEK – FOURTH BEND
07-16	CONFLUENCE OF ROMAIN RIVER AND SANTEE PATH CREEK
07-17	SECOND SMALL CREEK N. OF MARKER 26 IN FIVE FATHOM CREEK
07-18	MARKER 65 IN AIWW
07-19	AIWW AT CONFLUENCE WITH UNNAMED CREEK, 1.5 MI SW OF GRAHAM CREEK
08-01	MORGAN CREEK AT NORTHERNMOST CONFLUENCE WITH AIWW – ADJACENT TO MARKER 115
08-02	HAMLIN SOUND
08-03	DEWEES INLET AT AIWW – N. OF MARKER 110
08-04	BULLYARD SOUND - MARKER 104
08-05	WHITESIDE CREEK - MARKER 96
08-06	MARK BAY - MARKER 90
08-07	PRICES INLET
08-08	AIWW - MARKER 82
08-09	MOORES LANDING DOCK AT MARKER 74
08-10	MARKER 116 N. OF ISLE OF PALMS STP OUTFALL IN AIWW
08-11	ISLE OF PALMS STP OUTFALL AT 41 ST STREET
08-12	MORGAN CREEK AT 41 ST STREET MARINA
08-13	SEWEE BAY POG – SEWEE BAY AT HICKORY BAY
08-14	DEWEES ISLAND – ¼ MI UP HORSEBEND CREEK
08-15	DEWEES ISLAND – MOUTH OF WATERMELON CREEK
08-16	CONFLUENCE OF SEVEN REACHES AND GRAY BAY
08-17	SW COPAHEE SOUND AT PORCHER BLUFF CREEK
08-18	ONE HALF MI UP CEDAR CREEK FROM DEWEES INLET
08-19	CONFLUENCE OF TOOMER CREEK AT COPAHEE SOUND
08-20	UPPER REACHES OF WHITESIDE CREEK
08-21	UPPER REACHES OF CLAWSON CREEK
08-22	CONFLUENCE OF CAPERS CREEK AND SANTEE PASS
08-23	CONFLUENCE OF BULL CREEK AND BACK CREEK
08-24	ANDERSON CREEK AT MAIN FORK ABOVE CONFLUENCE WITH BULLS BAY
08-25	PALMETTO POINT CREEK ADJACENT TO MARKER 84
09A-01	HAMLIN CREEK AT ITS CONFLUENCE WITH AIWW
09A-02	UPPER END OF HAMLIN CREEK AT POG
09A-03	UPPER END OF SWINTON CREEK
09A-05	SHORTCUT – SWINTON CREEK
09A-06	INLET CREEK AND GENTIDE CREEK
09A-07	INLET CREEK AT ITS CONFLUENCE WITH AIWW
09A-08	BREECH INLET

09A-09	BEN SAWYER BRIDGE
09A-11	END OF 10 TH STREET AT HAMLIN CREEK
09A-12	SWINTON CREEK AT ITS CONFLUENCE WITH HAMLIN CREEK
09A-14	SWINTON CREEK AT ITS CONFLUENCE WITH AIWW
09A-15	AIWW BETWEEN INLET AND SWINTON CREEKS
09A-17	CONCH CREEK STATE SHELLFISH GROUND – MT. PLEASANT SIDE
09A-17A	CONCH CREEK STATE SHELLFISH GROUND – SULLIVANS ISLAND SIDE
09A-18	AIWW ADJACENT TO WILD DUNES GOLF COURSE STORM DRAINAGE OUTFALL
09A-19	AIWW AT 25 TH STREET – ISLE OF PALMS
09A-20	CONCH CREEK AT LOFTON CREEK
09A-21	INLET CREEK 100 YDS PAST FIRST BEND
09A-22	AIWW AT MARKER 118
09A-23	UPPER REACHES OF CONCH CREEK
09A-24	UPPER REACHES OF INLET CREEK
09A-25	UPPER REACHES OF SWINTON CREEK
09A-26	HAMLIN CREEK ½ WAY BETWEEN STATIONS 1&2
09A-27	INLET CREEK WEST OF AIWW AT FIRST BEND
09A-28	SWINTON CREEK WEST OF AIWW AT SECOND BEND
09A-29	LOWER HAMLIN CREEK AT SITE OF NEW BRIDGE
09A-30	UPPER INLET CREEK AT JENNIE CREEK
09A-31	BAY AT END OF UPPER INLET CREEK
09A-32	FIRST CREEK ON RIGHT DOWNSTREAM FROM STATION 6
09A-33	FIRST LARGE CREEK UP INLET CREEK FROM STATION 8
09A-34	AIWW AT CONFLUENCE WITH SULLIVANS ISLAND NARROWS
09A-35	300 YDS UPSTREAM FROM STATION 6
09A-36	CONCH CREEK AT ITS CONFLUENCE WITH AIWW
09A-37	LOWER CONCH CREEK AT MARINA CLOSURE ZONE

NPDES Program

Active NPDES Facilities

<i>RECEIVING STREAM FACILITY NAME PERMITTED FLOW @ PIPE (MGD)</i>	<i>NPDES# TYPE COMMENT</i>
HAMLIN CREEK CITY OF ISLE OF PALMS W&S PIPE #: 001 FLOW: M/R	SC0043583 MINOR DOMESTIC
MEETING REACH CITY OF ISLE OF PALMS/FOREST TRAILS SD PIPE #: 001 FLOW: 0.30	SC0025283 MINOR DOMESTIC
DEWEES CREEK TOWN OF DEWEES ISLAND WTP PIPE #: 001 FLOW: 0.025	SC0046817 MINOR DOMESTIC
CLAUSON CREEK LOWCOUNTRY DIRT/SCHAFFER MINE PIPE #: 001 FLOW: M/R	SCG730102 MINOR INDUSTRIAL
AIWW UNNAMED TRIBUTARY ST JAMES/SANTEE ELEM. PIPE #: 001 FLOW: M/R	SCG645033 MINOR DOMESTIC

AIWW UNNAMED TRIBUTARY
CHARLESTON CPW/BEAN PIT
PIPE #: 001 FLOW: M/R

SCG730226
MINOR INDUSTRIAL

AIWW UNNAMED TRIBUTARY
TOWN OF MT PLEASANT/CENTER ST. & RR RD
PIPE #: 004 FLOW: M/R

SC0040771
MAJOR DOMESTIC

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

<i>LANDFILL NAME</i> <i>FACILITY TYPE</i>	<i>PERMIT #</i> <i>STATUS</i>
PINCKNEY ROAD DUMP MUNICIPAL	----- CLOSED
CITY OF ISLE OF PALMS DUMP MUNICIPAL	----- CLOSED

Land Application Sites

<i>LAND APPLICATION</i> <i>FACILITY NAME</i>	<i>PERMIT #</i> <i>YPE</i>
TILE FIELD DEWEES ISL. DEV./DEWEES UTILITY CORP.	ND0069329 DOMESTIC
SPRAY ON GOLF COURSE CITY OF ISLE OF PALMS/WILD DUNES BEACH	ND0062260 DOMESTIC
SPRAYFIELD CHARLESTON COUNTY/LINCOLN HIGH SCH	ND0073016 DOMESTIC

Mining Activities

<i>MINING COMPANY</i> <i>MINE NAME</i>	<i>PERMIT #</i> <i>MINERAL</i>
G & H HOLDINGS LLC G&H POND	1388-19 SAND
OL THOMPSON CONSTRUCTION CO. WILLS POND	1356-19 SAND
CHARLESTON COUNTY PUBLIC WORKS BEAN PIT	1159-19 SAND

Growth Potential

There is a high potential for growth in this watershed, which contains the City of Isle of Palms, the Towns of Awendaw and McClellanville, and portions of the Towns of Mt. Pleasant and Sullivans Island. Several suburban growth areas surround the City of Charleston. Some of the larger planned developments include Wild Dunes, Shell Point, Hidden Lakes, Seaside Farms, Palmetto Fort, and the Charleston National Country Club. All growth areas in the watershed have water and sewer services

available. Sources of tourism in this watershed include Patriots Point and Fort Moultrie. Although the McClellanville area experiences scattered low density development, significant growth is not anticipated.

Watershed Restoration and Protection

Special Projects

Graham Creek Restoration Project

SCDHEC's Nonpoint Source Monitoring Team in conjunction with the Shellfish Sanitation Section have initiated a special effort to restore certain shellfish waters that currently do not meet standards. Graham Creek, which connects the AIWW with Bulls Bay, is currently classified as Restricted due to elevated bacteria levels. Restoration of the shellfish resource in these areas may be the most cost effective considering the potential resource is large and the impacts may be more easily eliminated than in more developed watersheds. Special intensive monitoring and field surveys have been conducted in these watersheds. In cooperation with the Charleston County Natural Resources Conservation Service, results from the monitoring will be used to target remediation of identified sources of bacteria. Similar projects have been focused on the areas surrounding Abbapoola and Toogoodoo Creeks south of Charleston.